Audit of Forest Planning and Practices

Squamish Forest District

Small Business Forest Enterprise Program

FPB/ARC/49

August 2002

Table of Contents

A. Report from the Board

B. Forest Practices Board Compliance Audit Process

C. Report from the Auditor

1.0 Introduction

2.0 Audit Scope

3.0 Audit Findings

4.0 Other Comments

5.0 Audit Opinion

Report from the Board

A. Report from the Board

This is the Board's report on a compliance audit of the Ministry of Forests Small Business Forest Enterprise Program (SBFEP) in the Squamish Forest District. The Squamish SBFEP operates within the Soo Timber Supply Area and Tree Farm Licence 38, and awards timber sale licences to small business operators.

The Report from the Auditor (Part C) provides further details on geography and features pertinent to the licence. Part C also describes the scope of the audit and the audit findings. The Report from the Auditor is based on the findings identified through the application of the audit procedures described in Part B.

The audit examined the Squamish Forest District's planning and practices for the period September 1, 2000, to September 23, 2001, related to operational planning (including forest development plans and silviculture prescriptions); timber harvesting; road construction, maintenance and deactivation; silviculture and fire protection.

The Board considered the Report from the Auditor along with supporting audit evidence and affirms the auditor's findings and conclusions. With the exception of bridge inspection and maintenance activities, the Squamish Forest District's SBFEP complied, in all significant respects, with Code requirements for operational planning; timber harvesting; silviculture; fire protection; and road construction, maintenance and deactivation activities.

With respect to the significant non-compliance of bridge inspections and maintenance, the Board notes that the Squamish Forest District acted promptly with plans to minimize the possibility of harm to persons or the environment. The Board encourages the Squamish Forest District to continue its cooperative approach, and fully implement its plans to address the audit results.

W.N. (Bill) Cafferata, RPF
Chair, Forest Practices Board
August 9, 2002

Forest Practices Board
Compliance Audit Process

B. Forest Practices Board Compliance Audit Process

Background

Forest Practices Board conducts audits of government and agreement-holders for compliance with the *Forest Practices Code of British Columbia Act* and regulations (the Code). The Board has the authority to conduct these periodic independent audits under section 176 of the *Forest Practices Code of British Columbia Act* (the Act). Compliance audits examine forest planning and practices to determine whether or not they meet Code requirements.

The Board undertakes both "limited scope" and "full scope" compliance audits. A limited scope audit examines selected forest practices (e.g., road construction, maintenance and deactivation; timber harvesting; or silviculture) and the related operational planning activities. A full scope audit examines all operational planning activities and forest practices.

The Board determines how many audits it will conduct in a year, and what type of audits (limited or full scope), based on budget and other considerations. The Board audits agreement-holders who have forest licences or other tenures under the *Forest Act* or the *Range Act*. The Board also audits government's Small Business Forest Enterprise Program (SBFEP), which is administered by Ministry of Forests district offices. Selection of agreement-holders and district SBFEPs for audit is done randomly, using a computer program, to ensure a fair, unbiased selection of auditees.

Audit Standards

Audits by the Forest Practices Board are conducted in accordance with the auditing standards developed by the Board. These standards are consistent with generally accepted auditing standards.

The audits determine compliance with the Code based on criteria derived from the *Forest Practices Code of British Columbia Act* and its related regulations. Audit criteria are established for the evaluation or measurement of each practice regulated by the Code. The criteria reflect judgments about the level of performance that constitutes compliance with each requirement.

The standards and procedures for compliance audits are described in the Board's *Compliance Audit Reference Manual*.

Audit Process

Conducting the Audit

Once the Board selects an audit and decides on its scope (limited scope or full scope), the audit period and the staff and resources required to conduct the audit are determined. Board staff also meet with the party being audited to discuss the logistics of the audit before commencing the work.

All the activities carried out during the period subject to audit are identified; for example, harvesting or replanting sites and building or deactivating road sections. The items that make up each forest activity are referred to as a "population." For example, all sites harvested form the "timber harvesting population." All road sections constructed form the "road construction population." The populations are then sub-divided based on factors such as characteristics of the sites and potential severity of the consequences of non-compliance on the sites.

For each population, the auditors choose the most efficient means of obtaining information to conclude whether there is compliance with the Code. Because of limited resources, auditors usually rely upon sampling to obtain audit evidence, rather than inspecting all activities.

Individual sites and forest practices within each population have different characteristics, such as the type of terrain or type of yarding. Each population is divided into distinct sub-populations on the basis of common characteristics (e.g., steep ground vs. flat ground). A separate sample is selected for each population (e.g., the cutblocks selected for auditing timber harvesting). Within each population, more audit effort (i.e., more audit sampling) is allocated to the sub-population where the risk of non-compliance is greater.

Audit work in the field includes assessments from the air using helicopters and intensive ground procedures, such as measuring specific features like road or riparian reserve zone width. The audit teams generally spend one to two weeks in the field.

Evaluating the Results

The Board recognizes that compliance with the many requirements of the Code is more a matter of degree than absolute adherence. Determining compliance, and assessing the significance of non-compliance, requires the exercise of professional judgment within the direction provided by the Board.

Auditors collect, analyze, interpret and document information to determine the audit results. The audit team, composed of professionals and technical experts, first determines whether forest practices are in compliance with Code requirements. For those practices considered to not be in compliance, the audit team then evaluates the degree to which the practices are judged not in compliance. The significance of the non-compliance is determined based on a number of criteria, including the magnitude of the event, the frequency of its occurrence and the severity of the consequences.

As part of the assessment process, auditors categorize their findings into the following levels of compliance:

Compliance – where the auditor finds that practices meet Code requirements.

Not significant non-compliance – where the auditor, upon reaching a non-compliance conclusion, determines that a non-compliance event, or the accumulation and consequences of a number of non-compliance events, is not significant and is not considered worthy of reporting.

Significant non-compliance – where the auditor determines that the event or condition, or the accumulation and consequences of a number of non-compliance events or conditions, is or has the potential to be significant, and is considered worthy of reporting.

Significant breach – where the auditor finds that significant harm has occurred, or is beginning to occur, to persons or the environment as a result of the non-compliance. A significant breach can also result from the cumulative effect of a number of non-compliance events or conditions.

Identification of a possible significant breach requires the auditor to conduct tests to confirm whether or not there has been a breach. If it is determined that a significant breach has occurred, the auditor is required by the *Forest Practices Board Regulation* to immediately advise the Board, the party being audited, and the Ministers of Forests, Energy and Mines, and Water, Land and Air Protection.

Reporting

Based on the above evaluation, the auditor then prepares the "Report from the Auditor" for submission to the Board. The party being audited is given a draft of the report before it is submitted to the Board so that the party is fully aware of the findings. The auditee is also kept fully informed of the audit findings throughout the process, and is given opportunities to provide additional relevant information and to ensure the auditor has complete and correct information.

Once the auditor submits the report, the Board reviews it and determines if the audit findings may adversely affect any party or person. If so, the party or person must be given an opportunity to make representations before the Board decides the matter and issues a final report to the public and government. The representations allow parties that may potentially be adversely affected to present their views to the Board.

At the discretion of the Board, representations may be written or oral. The Board will generally decide on written representations, unless the circumstances strongly support the need for an oral hearing.

The Board then reviews the report from the auditor and the representations from parties that may potentially be adversely affected before preparing its final report, which includes the Board's conclusions and, if appropriate, recommendations.

If the Board's conclusions or recommendations result in newly adversely-affected parties or persons, additional offers of representations would be required.

Once the representations have been completed, the report is finalized and released: first to the auditee and then to the public and government.

Report from the Auditor

Report from the Auditor

1.0 Introduction

As part of the Forest Practices Board's 2001 compliance audit program, the Ministry of Forest's Small Business Forest Enterprise Program (SBFEP) in the Squamish Forest District was selected for audit from the population of SBFEPs within the province. The Squamish SBFEP was selected randomly and not on the basis of location or level of performance.

The SBFEP is a program within which the Ministry of Forests awards timber sale licences to small business operators. The Ministry of Forests and individual licensees each have separate but inter-related roles and responsibilities within the program:

- The district manager is responsible for the overall management and performance of the SBFEP. This includes preparing and giving effect to the forest development plan[i] (FDP) and silviculture prescriptions,[ii] some road construction, maintenance and deactivation, as well as meeting silviculture obligations.
- The small business licensees who have been awarded timber sale licences (TSL holders) through the SBFEP have a number of legal responsibilities, as reflected in their timber sale licence, and other permits (road permits and road use permits). These responsibilities may include some construction, maintenance and deactivation of roads and ensuring that all operations—including harvesting—are carried out in compliance with the *Forest Practices Code of British Columbia Act* and related regulations (the Code).

The district responsibilities and individual TSL-holder responsibilities and performance are closely linked. The planning done by the district can impact directly on the TSL-holders' ability to adequately carry out their responsibilities. The quality of a licence holder's timber harvesting activities can affect a district's ability to adequately carry out its work, such as silviculture obligations, after logging is completed.

The Squamish Forest District encompasses 1.1 million hectares of forest and mountains immediately north of Vancouver in Sea-to-Sky country. The district's boundaries stretch roughly from Lions Bay at Howe Sound east to Harrison Lake (including the watersheds of the Squamish and Indian Rivers); north to Anderson Lake; and west to the headwaters of the Lillooet River (see attached map).

The Squamish SBFEP operates within both the Soo Timber Supply Area (Soo TSA) and Tree Farm Licence 38 (TFL 38). The SBFEP has an allowable annual cut of 115,789 cubic metres within the Soo TSA, and 13,118 cubic metres within TFL 38. The actual volume cut during the audit period was approximately 106,000 cubic metres.

The only higher level plans[iii] declared for the Soo TSA are the objectives for the Whistler Interpretive Forest. These higher level plans do not affect the SBFEP. There are no other declared higher level plans in the Squamish Forest District, as discussed in section 4.0 of this report.

2.0 Audit Scope

The audit examined the activities of the Squamish SBFEP, and TSL majors whose planned activities were included in the 2000-2004 FDP for the SBFEP, in the areas of operational planning; timber harvesting; silviculture; fire protection and road construction, maintenance and deactivation. These activities were assessed for compliance with the Code. All activities, planning and obligations for the period September 1, 2000, to September 23, 2001, were included in the scope of the audit.

As noted above, TSL majors whose operations were included in the SBFEP 2000-2004 FDP are included in the scope of this audit. TSL majors are different from other TSL holders in that they do their own initial planning, and prepare their own silviculture prescriptions. Four TSL majors were included within this audit.

The activities carried out during the audit period were:

- harvesting of 14 cutblocks with silviculture prescriptions
- harvesting of 27 areas under silviculture exemptions
- layout of 3 road sections totalling 4.5 kilometres
- construction of 11 road sections, totalling 18.5 kilometres
- construction or modification of 1 bridge
- maintenance of 26 bridges and major culverts and approximately 219 kilometres of road, involving activities such as road surfacing and the cleaning of culverts and ditches
- permanent and semi-permanent deactivation on 11 roads, totalling 36.8 kilometres
- site preparation of 3 cutblocks
- planting of 11 cutblocks
- chemical brushing on 3 cutblocks
- manual brushing on 2 cutblocks
- free-growing obligations on 16 cutblocks
- fire-preparedness planning, fuel management and hazard abatement

The activities carried out by the Squamish SBFEP during the audit period were approved in the 2000-2004 FDP. In addition, a total of 23 silviculture prescriptions and amendments were approved during the period.

Section 3.0 of this report describes the results of the audit. The Board's *Compliance Audit Reference Manual Version 5.0, (May 2001)* sets out the standards and procedures that were used to carry out the audit.

3.0 Audit Findings

Planning and practices examined

The audit work on selected roads and cutblocks included ground-based procedures and assessments from the air using helicopters. The audit examined the following practices:

- harvesting practices on 14 cutblocks with silviculture prescriptions
- harvesting practices on 10 areas under silviculture exemptions
- layout of 1 road section totalling 0.25 kilometres
- construction of 11 road sections totalling 17.5 kilometres
- construction of 1 bridge
- maintenance of 25 bridges and major culverts and approximately 200 kilometres of road
- permanent and semi-permanent deactivation on 11 roads totalling 36.8 kilometres
- site preparation on 3 cutblocks
- planting of 6 cutblocks
- chemical brushing on 2 cutblocks
- manual brushing on 2 cutblocks
- free-growing obligations on 15 cutblocks
- fire-preparedness planning, fuel management, and hazard abatement

The audit also examined the 2000-2004 forest development plan and three silviculture prescriptions where harvesting activities had not yet started.

Findings

The audit found that, with the exception of bridge inspection and maintenance activities, the Squamish SBFEP and TSL majors included in the audit complied, in all significant respects, with the Code's requirements for operational planning; timber harvesting; fire protection; road construction, maintenance and deactivation; and silviculture activities and obligations.

Bridge inspections and maintenance

The audit identified a situation of significant non-compliance with respect to bridge inspections and maintenance and a resulting potential user-safety issue.

The Code requires that all bridges must have a bridge inspection completed in writing by a qualified inspector at least once every two to three years, depending on the materials used in the bridge's structural components. These inspection reports must contain specific information such as the schedule for any required repairs and the date of the next scheduled inspection.

The audit assessed 25 of the 26 bridges that the SBFEP is required to inspect and maintain. Ten bridges were not inspected at the frequency required by the Code. It was further found that 20 of the inspection reports did not contain all of the required information. Examples of missing information include:

- a schedule for required repairs, if any;
- the date of the next scheduled inspection; and
- the length of time the bridge has been at its current site.

The SBFEP inspected all of the bridges in September 2001. As a result of these inspections, two bridges were found to be unsafe for industrial use. One of the bridges had a previous inspection completed in 1995. There was a Code requirement to complete another inspection in 1997 or 1998, but there is no record of such an inspection being done. The September 2001 inspection showed the bridge was unsafe for vehicle traffic, and the bridge was immediately load-rated at 0 tonnes.

The second bridge had an inspection completed in October 1999, which noted structural problems with the bridge. That inspection noted that "since the bridge was in place for a number of years it appears use can continue on a temporary basis (1-2 years)." The 2001 inspection falls within the acceptable timeframe for completing an inspection, but the required actions from the 1999 inspection report were not followed. The 2001 inspection stated the bridge was inadequate for logging trucks, but could be posted to 16 tonnes if the required repairs were completed. The bridge was incorrectly posted (a sign placed at the end of the bridge) with a rating of 16 tonnes without doing the repairs needed to justify this rating.

The findings relating to the condition of the two bridges highlight issues that result from a lack of adequate inspections, as well as not following the required actions in an inspection report. This can be a significant safety concern, not only for drivers of industrial vehicles, but also for recreational users who drive into the area. Both bridges are located on the same road, in fairly close proximity to each other. On September 21, 2001, the district posted a "road closed" sign at the start of the road. On September 24, 2001, the district physically blocked access to the bridges.

The main sections of the Code to which the non-compliance relates are sections 16 and 17(1)(b) of the *Forest Road Regulation*.

4.0 Other Comments

The FDP for the Squamish SBFEP is required to be consistent with any higher level plans that apply to the area under the plan. Higher level plans are defined in the Code as objectives for resource management zones, landscape units, sensitive areas and recreation sites, trails and interpretive forest sites. The Code envisioned identification of forest resources and establishment of the objectives for resource management zones through strategic planning with public involvement. This would then provide direction to forest development plans.

The Code has not been fully implemented in the Squamish district. Objectives for other forest resources, such as biodiversity or habitat for specific species such as grizzly bear, have not been established because resource management zones and landscape units have not been declared in the Squamish TSA.

The FDP must also include information about forest resources that have been made known by the district manager. Although higher level plan objectives for all resources have not yet been established, specific forest resources have been made known by the district manager. These include scenic areas identified in the Whistler, Sea to Sky and Ivey Lake local resource use plans, ungulate winter range, spotted owl resource management plans and community watersheds. The SBFEP has dealt with relevant known information in the FDP.

The lack of complete information and objectives for forest resources in the Soo TSA means it was not possible for the audit to determine if all forest resources are being addressed in the FDP for the Squamish SBFEP. The lack of higher level plans and objectives is not considered to be non-compliance on the part of the Squamish SBFEP.

5.0 Audit Opinion

In my opinion, except for the bridge inspections and maintenance practices described below, the operational planning; timber harvesting; silviculture; fire protection; and road construction, maintenance and deactivation activities carried out by the Squamish Small Business Forest Enterprise Program, from September 1, 2000, to September 23, 2001, complied, in all significant respects, with the requirements of the Code as of September 2001.

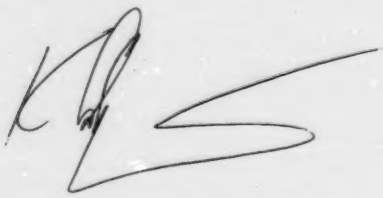
As described in section 3.0 of this report, the audit identified deficiencies in the frequency of bridge inspections, the content of bridge inspection records, and the scheduling and completion of recommended repairs identified during bridge inspections.

Without qualifying my opinion, I draw attention to section 4.0, which explains the place of higher level plans in the planning regimes anticipated by the Code.

In reference to compliance, the term "in all significant respects" recognizes that there may be minor instances of non-compliance that either may not be detected by the audit, or that are detected but not considered worthy of inclusion in the audit report.

Sections 2.0 and 3.0 of this Report from the Auditor describe the basis of the audit work performed in reaching this opinion. The audit was conducted in accordance with the auditing

standards of the Forest Practices Board. Such an audit includes examining sufficient forest planning and practices to support an overall evaluation of compliance with the Code.



Kevin Edquist, RPF, CEA(SFM)
Auditor of Record
Victoria, British Columbia

June 4, 2002

Audit of Squamish Forest District
Small Business Forest Enterprise Program

Small Business Forest Enterprise Program activities occur throughout the Squamish Forest District including portions of Tree Farm Licence 38

Forest District Boundary

Tree Farm Licence 38

Highway

(Map not to scale)

[i] A forest development plan is an operational plan that provides the public and government agencies with information about the location of proposed roads and cutblocks for harvesting timber over a period of at least five years. The plan must specify measures that will be carried out to protect forest resources. It must also be consistent with any higher level plans. Site-specific plans are required to be consistent with the forest development plan.

[ii] A silviculture prescription is a site-specific operational plan that describes the forest management objectives for an area to be harvested (a cutblock). The silviculture prescriptions examined in the audit are required to describe the management activities proposed to maintain the inherent productivity of the site, accommodate all resource values, including biological diversity, and produce a free-growing stand capable of meeting stated management objectives. Silviculture prescriptions must be consistent with forest development plans that encompass the area to which the prescription applies.

[iii] A higher level plan is a forest resource management objective that is established as legally binding by a written order. The objective applies to a resource management zone, landscape unit, sensitive area, recreation site, recreation trail, or interpretive forest site. Higher level plans are a provision of the *Forest Practices Code of British Columbia Act* that give direction to operational plans.